

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Kreidler, et al.
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 For : METHOD AND SYSTEM FOR THE ELECTRONIC
 PROVISION OF SERVICES FOR MACHINES VIA A DATA
 COMMUNICATION LINK
 Examiner : To be assigned
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PRELIMINARY AMENDMENT

Sir:

Preliminary to examination on the merits, please amend the application as
 follows:

IN THE SPECIFICATION:

On page 1, first line, delete: "Description".

On page 1, immediately after the Title, insert: --This application claims the benefit, under 35 U.S.C. § 119(e), of the priority date of U.S. Provisional Patent Application Number 60/305,199, filed July 13, 2001.--

On page 1, immediately before paragraph [0001], insert: --Field of the Invention--.

On page 1, before paragraph [0002], insert: --Background--.

On page 1, before paragraph [0012], insert: --Summary of the Invention--.

On page 3, before paragraph [0041], insert: --Brief Description of the Figures--.

On page 4, before paragraph [0042], insert: --Detailed Description of the Invention--.

On page 37, after "Abstract", delete "Method and system for the electronic provision of services for machines via a data communication link".

Please delete Abstract, and substitute the following new Abstract:

--With this invention, expert knowledge from machine manufacturers is applied quickly at any time to a machine via the Internet, by providing a main computer (host) for the production and provision of machine-related data and/or services and a machine-side working computer (client), which is connected to the main computer

via a data communication link and by means of which (client) machine state data can be acquired in real time and transmitted to the main computer, and by means of which machine-related data and/or services generated by the main computer as a function of such machine state data can be received by means of an analysis and evaluation unit.--

On page 37, after the body of the Abstract, delete "FIG 4".

IN THE CLAIMS:

Please cancel claims 1-30 without prejudice and add new claims 31-93:

--31. (New) A system for computer-aided management of a numerically controlled industrial processing machine, the management including transmission of content comprising least at one of the group consisting of data and services, the system comprising:

a host computer programmed for producing and providing machine-related content; and

a client computer for controlling at least one aspect of the industrial processing machine, the client computer in communication with the host computer via a data communication link, the client computer programmed for acquiring machine state data in real time and transmitting the machine state data to the host computer, the client computer further comprising

an analysis and evaluation unit for receiving machine-related content from the host computer.

32. (New) The system for computer-aided management according to claim 31, the host computer being in communication with a computer system of a manufacturer, the host computer comprising system data and being programmed to grant access by the manufacturer computer system to the system data.
33. (New) The system for computer-aided management according to claim 31, wherein the client computer comprises a unique identification means with respect to the host computer, via which means the host computer associates machine state data received from the client computer with its source.
34. (New) The system for computer-aided management according to claim 32, wherein the client computer comprises a unique identification means with respect to the host computer, via which means the host computer associates machine state data received from the client computer with the client computer.
35. (New) The system for computer-aided management according to claim 33, wherein the unique identification means comprises an identification code.
36. (New) The system for computer-aided management according to claim 34, wherein the unique identification comprises an identification code.
37. (New) The system for computer-aided management according to claim 31, the data communication link between the host computer and the client computer comprising a connection via a data communication network.

38. (New) The system for computer-aided management according to claim 37, wherein the data communication network comprises an Internet.
39. (New) The system for computer-aided management according to claim 37, wherein the network comprises an intranet.
40. (New) The system for computer-aided management according to claim 32, the data communication link between the host computer and the client computer comprising a connection via a data communication network.
41. (New) The system for computer-aided management according to claim 40, wherein the data communication network comprises an Internet.
42. (New) The system for computer-aided management according to claim 40, wherein the network comprises an intranet.
43. (New) The system for computer-aided management according to claim 37, the client computer determining machine state data in response to instructions received from the host computer via the data communications network.
44. (New) The system for computer-aided management according to claim 40, the client computer determining machine state data in response to instructions received from the host computer via the data communications network.

45. (New) The system for computer-aided management according to claim 43, wherein electronic documents for user selection of options are transmitted from the host computer to the client computer.
46. (New) The system for computer-aided management according to claim 45, wherein the documents comprise Internet pages.
47. (New) The system for computer-aided management according to claim 46, wherein the Internet pages comprise web pages.
48. (New) The system for computer-aided management according to claim 44, wherein electronic documents for user selection of options are transmitted from the host computer to the client.
49. (New) The system for computer-aided management according to claim 48, wherein the documents comprise Internet pages.
50. (New) The system for computer-aided management according to claim 49, wherein the Internet pages comprise web pages.
51. (New) In a host computer in communication via a data communication link with a client computer that is programmed for controlling at least one aspect of an industrial processing machine, for acquiring machine state data from the industrial processing machine, and for transmitting the acquired machine state data to the host computer, a method for computer-aided production and

provision of machine-related content that comprises least at one of the group consisting of data and services for the industrial processing machine, the method comprising the steps of:

receiving machine state data from the client computer via the data communication link;

generating the content as a function of the received machine state data;

and

transmitting the content to the client computer via the data communication link.

52. (New) The method according to claim 51, wherein the machine state data comprises real-time data acquired by the client computer.
53. (New) The method according to claim 50, comprising the further step of receiving over the data communication link from the client computer a unique identification means associated with the client computer.
54. (New) The method according to claim 53, wherein the unique identification means comprises an identification code,
55. (New) The method according to claim 52, comprising the further step of receiving over the data communication link from the client computer a unique identification means associated with the client computer.

56. (New) The method according to claim 54, wherein the unique identification means comprises an identification code.
57. (New) The method according to claim 53, further comprising the step of associating the machine state data received from the client computer with the identification means received from the client computer.
58. (New) The method according to claim 51, wherein the machine state data comprises at least one of the group consisting of program data, servo data, motor data, converter data, position data and sensor data.
59. (New) The method according to claim 51, wherein the received machine state data comprises data that is buffered in a data storage means by the client computer prior to its receipt by the host computer.
60. (New) The method according to claim 59, wherein the step of receiving the machine state data comprises receiving machine state data transmitted to the host computer under time control.
61. (New) The method according to claim 59, wherein the step of receiving the machine state data comprises receiving machine state data transmitted to the host computer under event control.
62. (New) The method according to claim 51, further comprising the step of analyzing, in the host computer, received machine state data.

63. (New) The method according to claim 54, wherein the step of receiving machine state data from the client computer via the data communication link comprises receiving machine state data from a plurality of client computers and wherein the step of receiving unique identification means associated with the client computer comprises the step of receiving a plurality of unique identification codes, each associated with a corresponding client computer, and wherein the unique identification codes comprise data, the method further comprising the steps of:

in a storage means, creating a data set comprising received machine state data from a selected one of the plurality of client computers;

identifying the unique identification code associated with the selected client computer; and

associating data, corresponding to the unique identification code, with the machine state data set.

64. (New) The method according to claim 51, wherein the client computer includes a system for monitoring of the processing machine and a sensor for acquiring machine state data, the method further comprising the steps of:

transmission of information relating to the availability of machine-related content to the client computer;

receiving, from the client computer, a request for machine-related content;

transmission of information relating to machine state data to be acquired by the client computer in connection with the request for machine-related content;

receiving from the client computer the data acquired by the client computer;

generating of the requested machine-related content; and

transmission of the machine-related content to the client computer.

65. (New) The method according to claim 64, further comprising the steps of:

receiving information relating to payment for content requested by the client computer; and

storing the information related to the payment.

66. (New) The method according to claim 64, comprising the further steps of:

generating a data structure to accommodate data relating to generated content;

storing, in the data structure, data representing the unique identification code; and

storing, in the data structure, data relating to the content.

67. (New) The method according to claim 66, further comprising the steps of:

determining measured data relating to the content transmitted to the client; and

storing, in the data structure, data relating to the measured data.

68. (New) The method according to claim 65, further comprising the steps of:
generating data representing first price information for requested content
as a function of fixed costs for a predetermined, repeated time period;
generating data representing second price information as a function of
variable costs associated with generating and transmitting the content.
69. (New) The method according to claim 68, wherein the repeated time period
comprises a monthly time period.
70. (New) The method according to claim 51, wherein the content relates to
electronic measurement of workpieces for problem diagnosis.
71. (New) The method according to claim 51, wherein the content relates to the
electronic measurement of tools for problem diagnosis.
72. (New) The method according to claim 51, wherein the content relates to the
electronic measurement of clamping means for problem diagnosis.
73. (New) The method according to claim 51, wherein the content relates to
indication of the relationships of process variables.
74. (New) The method according to claim 73, wherein the process variables
comprise variables selected from the group consisting of laser output, feed
speed and tool rotational speed.

75. (New) The method according to claim 51, wherein the content relates to analysis of the tool paths in a Cartesian coordinate system.
76. (New) The method according to claim 75, wherein the content further relates to correction of a part.
77. (New) The method according to claim 51, wherein the content relates to monitoring of process variables.
78. (New) The method according to claim 77, wherein the content further relates to limiting value monitoring.
79. (New) The method according to claim 78, wherein the content further relates to correlation monitoring,
80. (New) The method according to claim 51, wherein the content relates to program analysis by processing a program in a virtual simulation of the processing machine.
81. (New) The method according to claim 51, wherein the content relates to automatic creation of commissioning logs for documentation of a commissioning state.
82. (New) The method according to claim 51, wherein the content relates to evaluation for diagnosis fault situations.

83. (New) The method according to claim 51, wherein the content relates to saving and archiving at least one of the group consisting of configuration data, user data and programs, for the reconstruction of machine states.
84. (New) The method according to claim 51, wherein the content relates to saving and archiving at least one of the group consisting of configuration data, user data and programs for the detection of machine state changes caused by machine problems.
85. (New) An apparatus for computer-aided provision of machine-related content, comprising at least one selected from the group consisting of data and services, to a client computer in communication with a processing machine operated by a customer, wherein the client computer comprises a system for at least monitoring the processing machine and is in communication with at least one sensor for acquiring machine state data, the client computer in communication with the apparatus via a network, the apparatus comprising:
- means for transmitting to the client computer:
 - information relating to the availability of the machine-related content;
 - information relating to machine state data to be acquired by the client computer for use in generating content; and
 - content generated as a function of machine state data acquired by the client computer; and
 - means for receiving:

a request for machine-related content from the client computer;
 and
 data from the client computer comprising machine state data;
 and
 means for generating the machine-related content.

86. (New) The apparatus according to claim 85, the means for generating the machine-related content comprising an Internet web server, wherein the apparatus is programmed to generate Internet web pages using the Internet web server.
87. (New) The apparatus according to claim 85, wherein a unique identification means is associated with the customer processing machine with which the client computer is in communication, the apparatus further comprising a storage means for storing information from the client computer in conjunction with the identification means.
88. (New) The apparatus according to claim 87, wherein the unique identification means comprises an identification code.
89. (New) An apparatus according to claim 85, wherein an automation system is associated with the processing machine and the client computer, the apparatus further comprising:

means for loading instructions into automation system, the instructions controlling at least one function of the processing machine;

means for receiving customer-related system data from the automation system via the network, the system data being collected as a function of the loaded instructions;

means for generating services for the automation system as a function of the received customer-related system data; and

means for transmitting the generated services to the automation system via the network.

90. (New) The apparatus according to claim 89, further comprising means for providing a plurality of service options to the automation system via the network.
90. (New) The apparatus according to claim 90, further comprising means for selecting one of the plurality of service options upon receipt of a selection from the automation system.
91. (New) The apparatus according to claim 85, wherein the automation system has a network interface for communication via the network and for receiving the service information from the apparatus, the means for generating content for exchanging data with the network interface of the automation system adapted to exchange the data in a predefined data format.
93. (New) The apparatus according to claim 92, wherein the network interface comprising an Internet browser and the predefined data format comprises a format compatible with the Internet browser.--

REMARKS

Upon entry of this Preliminary Amendment, claims 31-93 are pending.


Support for new claims 31-93 is provided in the specification, including the originally filed claims. No new matter has been added.

This amendment is voluntary and not in response to any rejection made in this application.

Authorization is given to charge Deposit Account No. 23-1703 for any fee due in connection with this communication.

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Respectfully submitted,


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Version With Markings to Show Changes Made**Abstract**

--With this invention, expert knowledge from machine manufacturers is applied quickly at any time to a machine [(20)] via the Internet, by providing a main computer (host [8]) for the production and provision of machine-related data and/or services and a machine-side working computer (client [21]), which is connected to the main computer via a data communication link ([14]) and by means of which (client) machine state data can be acquired in real time and transmitted to the main computer, and by means of which machine-related data and/or services generated by the main computer as a function of such machine state data can be received by means of an analysis and evaluation unit.--

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